

Subject Index

A
 α -level set 118
 Abduction 135
 Active character matrix 309
 Actual character matrix 309
 Adjacency criterion 307
 Admissible violations 102
 Aggregation approach 238
 Aggregator 100
 Agreement index 271
 Angle criteria 307
 Antecedent variable (state) 126
 Approach analysis 28
 Approach ideal 24
 Approach space 27
 Approach structure 27
 Approach system 24
 Appropriate governing
 equation 130
 Approximation 103
 Aspiration levels 107
 Assignment algorithm 143-45

B
 Baas and Kwakernaak approach 242
 Basic probability assignment 53,
 116, 119-23, 126-27
 Belief function 201
 Belief 117
 Brouwerian lattice 219
 Budgets 266

C
 Canonical statement 115, 119
 Category for fuzzy set
 theory 3, 73
 Category L-set 69
 Category, cartesian closed 6
 Category, finitely complete 6
 Certainty 117
 Character recognition 301
 Characteristic function 3, 69
 Characters data bases 313
 Classification 295
 Co-T-norms 9
 Coding strings 309
 Combinatorial techniques 315
 Combined value 129
 Common isosignificant 66
 Commonsense knowledge 79, 95
 Compactness 28

Compatibility 323
 Compensatory 'and' 109
 Complement (Zadeh) 9
 Complete boolean algebra 74
 Complete lattice 19, 219
 Complete solution 234
 Completely distributive
 lattice 19
 Components in parallel 287
 Components in series 286
 Composition of fuzzy
 relations 214, 326
 Compromise solution 234
 Computational efficiency 108, 109
 Concordance relation 238
 Condition of consistency 57
 Conditional 'if' 145-46
 Conditional support 136
 Conditioned usuality 85-7, 95
 Conditioning variable 83, 85
 Confidence of performance 369
 Connectedness 28
 Consequent variable (action) 126
 Contracting 27
 Contraction map 28
 Convergent series of
 fuzzy sets 43
 Convex fuzzy random variable 41
 Course of action 129
 Creativity measure 378
 Crisp model equivalent 237
 Crisp multicriteria problem 233
 Crisp subset 123-24
 Curve following 306
 Cylindrical minimal
 extension 120

D
 Data driven 63
 Decision space 100
 Deconvolution 181
 Default value 80, 87
 Degree of conflict (conflicted
 probability mass) 122
 Degree of satisfaction 326
 Diagnostic process 319
 Dichotomous tree 357-67
 Dichotomous interpretation 119
 Didactograph 349-55
 Direct aggregation model 240
 Discordance relation 239

- Discounting rate 258
 Disposition 80, 87, 89
 Dispositional Barbara 89, 91, 93
 Dispositional modus ponens 93
 Dissemblance relation 296
 Dissimilarity relation 296
 Distance 23
 Dominance set 245
- E
- Efficient solution 234
 Electrocardiography 317
 Endpoint 305
 Entropy function 51, 378, 383
 Epistemic logic (range) 134
 Expected possibility 117
 Expected value 40, 41, 80
 Expert system 134
 Exponential smoothing 272
 Exponential weighting 240
 Exponentiation 6
 Extended pseudo quasi-metric 23
 Extension principle 222
 Extension 21
- F
- Failure rate 279
 Feasible region 104
 Feature extraction 307
 Focal element 116, 119-22
 Fusion of data 121
 Fuzzification process 9
 Fuzzy 'and' 110
 Fuzzy 'max' 326
 Fuzzy 'min' 326
 Fuzzy 'or' 110
 Fuzzy arithmetic 222
 Fuzzy convex set 41
 Fuzzy decision model 100
 Fuzzy decision operator 314
 Fuzzy Delphi 290
 Fuzzy duality theorem 112
 Fuzzy efficiency 236
 Fuzzy environment 258
 Fuzzy estimation value 389
 Fuzzy information 52
 Fuzzy integral. (Sugeno) 55
 Fuzzy intervals 337
 Fuzzy linear programming 17
 Fuzzy linguistic description 321
 Fuzzy programming problem 51, 55
- Fuzzy measure 205
 Fuzzy number 123, 173-87, 259, 338
 Fuzzy outranking 248
 Fuzzy point 71
 Fuzzy preference 245
 Fuzzy proportion 81, 89
 Fuzzy proposition 335
 Fuzzy quantifier 80, 83, 91, 92
 Fuzzy random variable 40, 46, 48
 Fuzzy relation 214, 323
 Fuzzy set in Banach space 40
 Fuzzy set, limited 118
 Fuzzy set-valued measure 42
 Fuzzy subsets 173
 Fuzzy inequality 101
 Fuzzy zero base budgeting 266
- G
- Grade of membership 82-3, 87-8
 Greek handwritten characters 313
- H
- Hamming distance 182, 295, 385
 Hausdorff metric 41
 Hausdorffness 28
 Hierarchical aggregation 238
 Holophrastic synthesis 67
 Human operator 350, 370, 393
 Hybrid number 172
 Hypothesizable alternative causes 62
- I
- Ideal set 15
 Ideograph 353
 Image processing 301
 Imago system 353
 Indiscernibility 16
 Inference mechanism 151
 Informatic educational system 349
 Information content 118
 Informativity: semantical 61-3
 Informativity: statistical 61-3
 Interpretational clarity 61
 Intersection-product syllogism 91
 Interval of confidence 172, 259
 Investments 258
 Isosignificant 64
- J
- Joint possibility 119

- Joint variable 119
- L**
 λ -level set 124
 Level of complexity 356
 Level of presumption 172, 259
 Lifetime 278
 Linear programming problem 17, 99
 Linguistic approximation 245-47
 Linguistic quantifier 224
 Logic programming style of
 inference 135
 Long-range forecasting 290
 Lower probability 207
 Lp-metric 17
- M**
 Management of uncertainty 79
 Material implication 145-46
 Mathematical programming 99
 Max-min convolution 176
 Max- Σ -count operator 312
 Maximal membership grade 129
 Maximal non-empty level 129
 Maximizing decision 100
 Maximizing set 243
 Maximizing solution 100, 104
 Maximum convolution 288
 Maximum sub-relation of
 similarity 294
 Medical diagnostic flow 62
 Medical knowledge 317, 333
 Membership function 175
 Membership function, non
 linear 100, 106, 108
 Membership versus equality 71
 Metric 16
 Min. model 141-57
 Min. rule of fuzzy logic 139
 Morficity 28
 Morphisms 3
 Morphological method 378
 Multi-attribute decision
 model 233, 237
 Multiplication model 146-50, 156
 Mutual exclusion model 143
 Mutual selection 295
 Mycin 135
- N**
 Necessary support 137, 140
- Necessity 144
 Necessity of dominance 248
 Negentropy principle 389
 Neighbourhoodmaps 24
 Nil feature 312
 Node 305
 Non linear programming 99
 Nonsymmetrical models 103
- O**
 Objective function 100, 104
 Objects 3
 One-point set 69
 Order between hybrid numbers 181
 Order-focussed approach 238
- P**
 P.E.R.T. with hybrid numbers 194
 Parallel fuzzy labelling 310, 315
 Pattern recognition 301
 Pixel definition 304
 Plausibility 117, 208
 Polygonal approximation 306
 Portmanteau theorem 32
 Possibility distribution 116-19,
 321, 335
 Possibility law 271
 Possibility measure 144, 194, 342
 Possibility of dominance 247-48
 Possibility-probability
 consistency 51, 54
 Possibility-probability granule
 (D-S) 116, 119-20, 126-30
 Possible payoff 123-25
 Power power set 202
 Power set 202
 Primitive generation 306
 Probabilistic set 187
 Probabilistic uncertainty 115
 Probability measure 9
 Probability of a fuzzy event 196
 Program clause 136
 Prolog 133, 136, 138
 Prototypicality 89
 Pseudo quasi-metric 16
 Pseudo quasi-semi-metric 16
 Pseudo semi-metric 16
 Pseudocomplements 16
 Pseudometric 16
 Pullback 3
 Pullback diagram 70

- Pullback in L-set 75
- Q
- Qualificational definition 84
- Quantifier extension principle 91
- R
- Radon-Nikodym theorem 45
- Random fuzzy set 187
- Random set 40
- Ranking 240, 248
- Rating 240
- Reasoning under uncertainty 133
- Redistribution of probability 65
- Regressive analysis 351
- Regularization map 24
- Relative interpretational
ambiguity 61
- Reliability 278
- Renormalisation method of resolving conflicts (Shafer) 148
- Rieffel theorem 148
- Rule-based system 126
- S
- S-shaped membership function 107
- Satisfier 235
- Second-order quantifier 90
- Segmentation 306
- Selection of action 129
- Semantic unification 133, 139
- Semantical synthesis 64
- Semantical transformation 64
- Set-valued measure 39
- Sheaf theory 71
- Sigma-count 82
- Similarity 87, 88, 89
- Singleton 87
- Specificity 118
- State of human operator 393
- Statistical algorithm 315
- Stim 5 program 378
- Strenght 116-18, 121-22, 126
- Subobject classifier 5
- Subsheaves 71
- Sum-product convolution 177
- Summary operator 124-25
- Support Horn clause for logic representation 136
- Support interpretation 154
- Support logic program 136-50
- Support pair 136, 139
- Survival laws 284
- Syllogism 224
- Symmetrical model 100
- Syntactic algorithm 315
- Syntactic unification 133, 139
- Synthesis: complex 66
- Synthesis: multiple 66
- Synthesis: simple 66
- T
- T-norms 9
- T2- equality 30
- Tail-removal 305
- Terminal object 7
- Test-score semantics 83, 86
- Theory of approximate reasoning 115-16
- Theory of evidence. (Dempster-Shafer) 53, 115, 122, 134, 141, 148
- Theory of measurement 28
- Theory of personal construct 134
- Thinning 30-3
- Tolerance interval 102
- Topological allocation 309
- Topological category 28
- Topological space objects 8
- Topos 3
- Total variation 44
- Transitionmap 26
- Translation rule 83, 116
- Triangular fuzzy number 183, 240, 259
- Truth-qualification 84, 220, 245
- Typical value 80, 87
- Typicality 87-8
- U
- Unconditionally convergent 43
- Unconditioned quantifier 83
- Unsure 137
- Unusually 94
- Upper probability 207
- Usual returns 123
- Usuality 79, 88, 95, 115, 126
- Usuality-qualified proposition 80-1, 85, 89, 93-5
- Usuality-quantified Barbara 89

V

Vacuous quantifier 93

Valuation 205

Vector-maximum problem 233-34

Voting model 137, 155

W

Weak topology 32